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Published:

- With international search report.
- Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.

(88) Date of publication of the international search report:
7 June 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CONTROLLED AVAILABILITY OF FORMULATION COMPONENTS, COMPOSITIONS AND LAUNDRY METHODS EMPLOYING SAME

(57) Abstract: The present invention relates to a method for the controlled availability of formulation components, such as organic catalysts, into a wash solution. More particularly, the present invention relates to products and bleaching compositions containing such formulation components and laundry methods employing such formulation components.

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INTERNATIONAL COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 7749X/MH	FOR FURTHER ACTION		see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US 00/ 23323	International filing date (day/month/year) 25/08/2000	(Earliest) Priority Date (day/month/year) 27/08/1999	
Applicant THE PROCTER & GAMBLE COMPANY et al.			

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 9 sheets.
☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

- ☐ as suggested by the applicant.
- ☐ because the applicant failed to suggest a figure.
- ☐ because this figure better characterizes the invention.
- ☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/23323**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See ADDITIONAL sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

CLAIMS OF SUBJECT 1.

See FURTHER INFORMATION sheet PCT/ISA/210

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/23323

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see further information Form PCT/ISA/210

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box 1.2

Claim 1 is defining a method of laundering by reference to the process step of contacting a fabric with an organic catalyst by a controlled availability method. It is understood that the catalyst should be released in a controlled manner. It is, however, not defined how this is controlled. In the description, three Test Protocols are provided which are, however, not discussed in the available prior art. Therefore, claim 1 is not properly defining the matter for which protection is sought as required by Article 6 PCT. It appears that the essential features (how is it controlled?) are not defined in the claims. Independent of this, it appears that many methods fall within the ambit of the claim, whereas the claim is only supported for a limited number of methods (or catalysts). Furthermore, the skilled person does not appear to be provided with sufficient information to carry out the invention over the entire claimed breadth of the claim. In the present case, the claim 1 so lacks clarity and support and the application so lacks disclosure that a meaningful search over the whole of the claimed scope is impossible.

Consequently the search for claim 1 has been carried out for those parts of the claim which appear to be clear, supported and disclosed, namely those parts relating to the method in which the organic catalyst is delivered in an encapsulated or agglomerated form as described in the description (see page 26 line 16 - page 28 line 30).

Mutatis mutandis, the subject-matter of claims 5 and 13, also referring to the controlled availability method, so lack clarity and support and the application so lacks disclosure that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search for these claims has, as in the case of claim 1, also been directed towards respectively bleaching compositions and products comprising an encapsulated or agglomerated organic catalyst.

Further, claims 2 (a), b), f) and g) and 10 (a), b), f) and g) disclose the use of an organic catalyst represented by the formulas [I], [II], [III] and [IV]. Thus, these claims all relate to a extremely large number of compounds. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compounds

- represented by the formulas [XI], [XII] , [XIII] and [XIV] as mentioned in claims 3 (a), b), f) and g) and 11 (a), b), f) and g) and in the description at pages 7-9 and 20-22.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1 partially, 2 a), 2 b), 2 f), 2 g), 3 a), 3 b), 3 f), 3 g), 4, 5 partially, 6-9, 10 a), 10 b), 10 f), 10 g), 11 a), 11 b), 11 f), 11 g), 12, 13 partially, 14, 15

An encapsulated/agglomerated organic bleach catalyst, used to clean fabrics, represented by the formula:

$R_1R_2C=N+R_3R_4 \quad (X^-)_v$ which are aryliminium cations/polyions/zwitterions

or in its active epoxide form,

$R_1R_2C-N+R_3R_4 \quad (X^-)_v$ which are oxaziridinium cations/polyions/zwitterions

with the substituents defined as in the claims and the description.

2. Claims: 1 partially, 2 c), 3 c), 5 partially, 10 c), 11 c), 32 (V), 32 (VI), 33-40, 41 (V), 41 (VI), 42-59, 60 (V), 60 (VI), 61-63

An encapsulated/agglomerated organic bleach catalyst, used to clean fabrics, represented by the formula:

$R_1R_2R_3C-NR_4R_5$ which are modified amines,

with the substituents defined as in the claims and the description.

3. Claims: 1 partially, 2 d), 3 d), 5 partially, 10 d), 11 d), 16-31, 32 (V), 32 (VI), 33-40, 41 (V), 41 (VI), 42-59, 60 (V), 60 (VI), 61-63

An encapsulated/agglomerated organic bleach catalyst, used to clean fabrics, represented by the formulas:

$R_1R_2R_3C-N+R_4R_5O^-$ or $R_1R_2R_3C-N+R_4R_5O^{2-}$

which are modified amine oxides,

with the substituents defined as in the claims and the description.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

4. Claims: 1 partially, 2 e) (XXIa), 2 e) (XXIII),
 2 h) (XXIVa), 2 h) (XXVI), 2 h) (XXVII),
 3 e) (XXVIIIa), 3 h) (XXXIa), 5 partially,
 10 e) (XXIa), 10 e) (XXIII), 10 h) (XXIVa),
 10 h) (XXVI), 10 h) (XXVII), 11 e) (XXVIIIa),
 11 h) (XXXIa)

An encapsulated/agglomerated organic bleach catalyst, used to clean fabrics, represented by the formulas:

$R_1R_2C=N-SO_2R_3$ (sulfonimine) or $R_1R_2C=N-SO_2-N=CR_3R_4$
 (thiodiazole dioxide)

or in their active epoxide form,

$R_1R_2C-N-SO_2R_3$ (oxaziridine sulfonimine) or
 $R_1R_2C-N-SO_2-N=CR_3R_4$ or $R_1R_2C-N-SO_2-N-CR_3R_4$ (oxaziridine
 thiodiazole dioxide)

with the substituents defined as in the claims and the description.

5. Claims: 1 partially, 2 e) (XXIb), 2 h) (XXIVb),
 3 e) (XXVIIIb), 3 h) (XXXIb), 5 partially,
 10 e) (XXIb), 10 h) (XXIVb), 11 e) (XXVIIIb),
 11 h) (XXXIb)

An encapsulated/agglomerated organic bleach catalyst, used to clean fabrics, represented by the formula:

$R_1R_2C=N-PO_2R_3$ (phosphonimine)

or in its active epoxide form,

$R_1R_2C-N-PO_2R_3$ (oxaziridine phosphonimine)

with the substituents defined as in the claims and the description.

6. Claims: 1 partially, 2 e) (XXII), 2 h) (XXV), 3 e) (XXIX),
 3 h) (XXXII), 5 partially, 10 e) (XXII),
 10 h) (XXV), 11 e) (XXIX), 11 h) (XXXII)

An encapsulated/agglomerated organic bleach catalyst, used to clean fabrics, represented by the formula:

$R_1R_2C=N-COR_3$ (N-acylimine)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

or in its active epoxide form,

R1R2C-N-COR3 (oxaziridine N-acylimine)

with the substituents defined as in the claims and the description.

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C11D3/39 C11D17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 710 116 A (BURCKETT-ST LAURENT JAMES CHAR ET AL) 20 January 1998 (1998-01-20) claims examples	1-15
Y	abstract column 4, line 66 -column 9, line 64 column 28, line 23 -column 30, line 10 ---	1-15
X	US 5 817 614 A (DYKSTRA ROBERT RICHARD ET AL) 6 October 1998 (1998-10-06) cited in the application claims examples	1-15
Y	abstract column 4, line 43 -column 9, line 38 column 27, line 19 -column 29, line 3 --- -/--	1-15

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

2 January 2001

Date of mailing of the international search report

10. 04. 2001

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 576 282 A (BURCKETT-ST LAURENT JAMES C T ET AL) 19 November 1996 (1996-11-19) cited in the application claims examples	1-15
Y	abstract column 5, line 4 -column 9, line 56 column 28, line 1 -column 29, line 65 ---	1-15
Y	WO 95 13351 A (UNILEVER NV) 18 May 1995 (1995-05-18) cited in the application the whole document ---	1-15
Y	WO 95 13352 A (UNILEVER NV) 18 May 1995 (1995-05-18) cited in the application the whole document ---	1-15
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A	WO 98 23602 A (CLOROX CO) 4 June 1998 (1998-06-04) claims examples table 1 page 13, line 27 -page 17, line 27 page 25, line 1 - line 29 ---	1,4-8, 12-15
A	US 4 194 987 A (BRUBAKER GAYLEN R) 25 March 1980 (1980-03-25) claims column 9, line 30 - line 41 ---	1-15
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A	EP 0 909 810 A (CLARIANT GMBH) 21 April 1999 (1999-04-21) claims page 4, line 33 - line 40 -----	1-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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International Application No

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